

diverticulum, which joins the duct of the spermatheca just as it perforates the longitudinal muscular layer on its way to the exterior, has delicate muscular walls consisting of circular oblique and longitudinal muscle-fibres well supplied with blood-capillaries; the interior is lined with a delicate epithelium, the cells of which are so excessively thin that hardly anything of them is recognizable but the nuclei; this epithelium contrasts very conspicuously with the tall columnar cells which line the cavity of the spermatheca. The diverticula agree in their minute structure with the spermathecae of *Urochæta*; it does not appear likely that they are immature considering their large size and the fully mature condition of the Worm.

The ovaries and oviducts occupy the usual position; the oviducts appear to open separately at either extremity of the slit-like female orifice; I am not, however, absolutely certain about this.

It is interesting to note the great difference in the spermathecal diverticula of this species and of *Acanthodrilus* (see Proc. Zool. Soc. 1885, p. 829) as regards their histological structure.

7. On *Bipalium kewense* at the Cape.

By ROLAND TRIMEN, F.R.S. &c.

[Received June 7, 1887.]

The characteristic figures of this Planarian given by Prof. Jeffrey Bell (Proc. Zool. Soc. 1886, pl. xviii.), together with Prof. Moseley's diagnosis of the species (Ann. & Mag. Nat. Hist. 5th ser. 1878, i. p. 237), have enabled me to identify it with a worm of which a good many specimens were brought to me in the years 1883-1885. Most of the examples were found by Mr. U. Chalwin, of the Botanic Gardens, Cape Town, from whom, on the 20th of January, 1883, I received the first and largest individual I have seen. I sent five specimens to Prof. Moseley in May 1883, along with some *Peripatus* specimens forwarded to Mr. A. Sedgwick; but it was not till the end of 1885 that I learned from Prof. Moseley the generic position of the worm. Five living specimens have recently been sent to me by Mr. Chalwin, and the comparison of them with the figures and diagnosis referred to leaves no doubt of their being *B. kewense*.

Unfortunately the circumstances of its occurrence here throw no light on the proper habitat of the species, as all the examples (20) brought to me, and others of which I have been informed, were found in gardens. No instance of the discovery of the worm in a wild uncultivated station is known to me. Mr. Chalwin found most of his specimens under flower-pots or plant-cases standing on damp garden-mould, sometimes in ordinary glass frames, but others occurred among damp grass.

I have not found this *Bipalium* exhibit here the extreme sensitiveness to light mentioned by Prof. Bell (*l. c.* p. 168). It is certainly more active at night, but several of my specimens have lived with apparent unconcern in glass jars (provided with water, earth, and

plants) fully exposed to bright daylight. The only individual that broke up into short fragments was one which I wished to preserve, and to which I incautiously applied alcohol not sufficiently diluted.

Multiplication by transverse fission is, however, well shown by this animal. The first that I had (about 8 inches long) on the third day of its captivity parted with a short portion (about $\frac{1}{2}$ inch) of its body; and this portion, at first almost motionless, soon began very slowly to move, but remained sluggish and inactive; on the fifth day a second portion was given off, about the same size as the first. On the sixth day the parent worm unfortunately effected its escape, possibly through the perforated zinc covering of the jar, although the perforations were very small. To prevent the escape of the smaller ones I now put the stopper in the mouth of the jar. Two or three days afterwards I was surprised to find a third specimen, very much smaller than the others, but could not ascertain which of its two companions was its parent. The three all remained very sluggish for six days, but on February 4th the two larger ones were moving about; and on my tilting the jar so as to let the water touch them, all three began gliding with some activity towards the top of the jar. Although all three had by this time developed a small fan-shaped expansion at the cephalic extremity (which appeared to be entirely wanting on their original start as separate individuals), it was noticeable that they did not use it as the old worms perpetually do, viz. in exploring the way from side to side with ceaseless undulating motion of its free edge, but moved straight onward with the body simply extended.

A living specimen about 6 inches in length, which was brought to me on the 30th ultimo, parted with about $\frac{3}{4}$ inch of itself on the evening of the second instant. The separated portion was simply thicker and blunter at one end, but soon began to move in a straight line with the thicker end foremost. This separate individual has not up to date (13th May) shown much activity; it usually remains near its parent in a slightly curved posture.

The parent worm, like all the larger living specimens I have seen, assumes quite complicated coils (often about grass stems and leaves) when at rest; but I have specially remarked in this specimen that it also presents at times several *spiral* twists or contortions. On the 5th instant it remained for many hours so twisted, one spiral being at a little distance behind the head, another about an inch further down, and a third about 2 inches from the caudal extremity.

Without abundant moisture this *Bipalium* speedily dies. In spite of its copious supply of mucus, it would appear to be extraordinarily sensitive to the effect of contact with an injurious substance; for a good-sized one brought to me on the 3rd instant died with remarkable suddenness on contact with the blacklead used for polishing grates. This specimen, in apparent vigour, was brought in while I was at breakfast, and was placed with the arum-leaf on which it rested on the mantelpiece. Not more than a quarter of an hour afterwards I rose to remove it, but it had left the leaf and could not for some ten minutes be found. It was then discovered, quite dead and

shrivelled, adhering by its half-dried mucus to the black-leaded surface of the hearth-stone immediately in front of the grate.

I do not think that this *Bipalium* ever makes use of its mucus as a means of suspension; indeed the nature of its haunts would seem to render any such means unnecessary.

South-African Museum, Cape Town,
13th May, 1887.

8. Descriptions of two new Species of Fishes from Mauritius. By Dr. A. GÜNTHER, V.P.Z.S.

[Received June 14, 1887.]

(Plates XLVIII. & XLIX.)

LATILUS FRONTICINCTUS. (Plate XLVIII.)

This species differs very considerably from the typical forms of *Latilus* in the greater development of the spinous dorsal fin, in the armature of the opercles, narrowness of the infraorbital bone, and great width of the bridge connecting the branchiostegal membranes, so that perhaps it would be better referred to a distinct genus to which the name of *Hoplolatilus* may be given.

B. 6. D. $\frac{10}{13}$. A. $\frac{2}{12}$. P. 17. V. $\frac{1}{5}$. L. lat. 125.

Head and body compressed, oblong; the greatest depth of the body is nearly equal to the length of the head and one fourth of the total length without caudal. Interorbital space rather convex, somewhat less than one third of the length of the head. Eye equal to the length of the snout and one fourth of the length of the head. Snout short, obtuse, slightly overlapping the lower jaw. Cleft of the mouth oblique, extending a little behind the middle of the eye; the maxillary being separated from the eye by an extremely narrow infraorbital bone. Teeth in both jaws in a band anteriorly, which on the sides tapers off into a single series and terminates behind in the enlarged curved labroid tooth; the upper jaw is armed with two pairs of canines in front, whilst the lower bears a whole series of canine-like teeth outside the villiform band; there are no teeth on the palate.

The præoperculum is strongly armed; it not only bears a strong and coarse serrature along its posterior margin, but it is also armed with a strong triangular spine at its angle. The operculum terminates behind likewise in a flat triangular spine.

Only the snout is naked, the remainder of the head being covered with minute scales.

Branchiostegal membrane not joined to the isthmus, forming a broad bridge across it; gill-rakers rather long and lanceolate; there are sixteen along the lower branch of the outer branchial arch. Pseudobranchiæ well developed. A singular skinny nodule of white colour is attached to the inner edge of the clavicle, opposite to the pectoral fin.